

Dust growth and planetesimal formation near the snow line in protoplanetary disks

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The growth of micron-sized dust particles into kilometer-sized planetesimals is the first step of planet formation in protoplanetary disks. The details of planetesimal formation are still poorly understood because a number of barriers have been identified that could hinder dust growth. In recent years, much attention has been paid to the roles of the snow line in dust growth. The snow line is the location where water ice sublimates and condenses, and recent models have shown that the sublimation, condensation, and other related processes like sintering greatly change the size distribution of icy dust particles near the snow line. In my talk, I will review how these processes could affect planetesimal formation near the snow line as well as the observational appearance of protoplanetary disks.